# Renewable Energy and Meeting New Hampshire's State Operations Energy Goals

Setting Guidance on the State's Sale, Purchase, and Retention of Renewable Energy Certificates

State Government Energy Committee

July 11, 2017

# Purpose

Consider policy options pursuant to the State's generation of renewable electric and thermal energy and its fossil fuel reduction requirements under Executive Order 2016-03

# Overview

1. Types of Renewable Energy Certificates
2. Current State use of RECs
3. Options and Implications
4. Discussion

# What are Renewable Energy Certificates?

RECs are tradable, non-tangible energy commodities that represent proof that one megawatt-hour (MWh) of electricity (or thermal equivalent) was generated from an eligible renewable energy resource.

# What does a REC represent?

- A REC represents the "environmental attributes" associated with a renewable energy. This is typically associated with a reduction in greenhouse gas emissions or fossil fuel use as compared to conventional energy sources.

# Types of REC Markets

- Mandatory or Compliance Markets – exist because of state mandates such as Renewable Portfolio Standards.
- Voluntary Markets – exist because of consumer preference for renewable energy and are not driven by state mandates. Voluntary RECs allow a consumer to go above and beyond what mandatory policy decisions require and to reduce the environmental impact of their electricity use.

NH buys voluntary RECs as part of its statewide electricity contract.

# Eligible RECs in NH

- REC-eligible energy sources in NH include: wind; solar; small hydro; biomass; methane gas; and renewable thermal.
- Eligible generators must register their production to be granted RECs.
- Only the owner of the REC may claim the environmental attribute of that unit of energy.

# Energy Goals for State of NH operations:

- NH RSA 21-I:14-c - Energy Consumption Reduction Goal (SB 73, 2010)
  - Fossil fuel reduction in state facilities
    - 25% by 2025

- Executive Order 2016-3
  - Fossil fuel reduction in state facilities
    - 30% by 2020
    - 40% by 2025
    - 50% by 2030

# What if a source doesn't register its renewable energy production?

- Under NH law, electric energy suppliers may count unclaimed RECs from net-metered (connected to the grid) renewable electric energy systems toward their RPS compliance requirements.

# Can the State generate RECs?

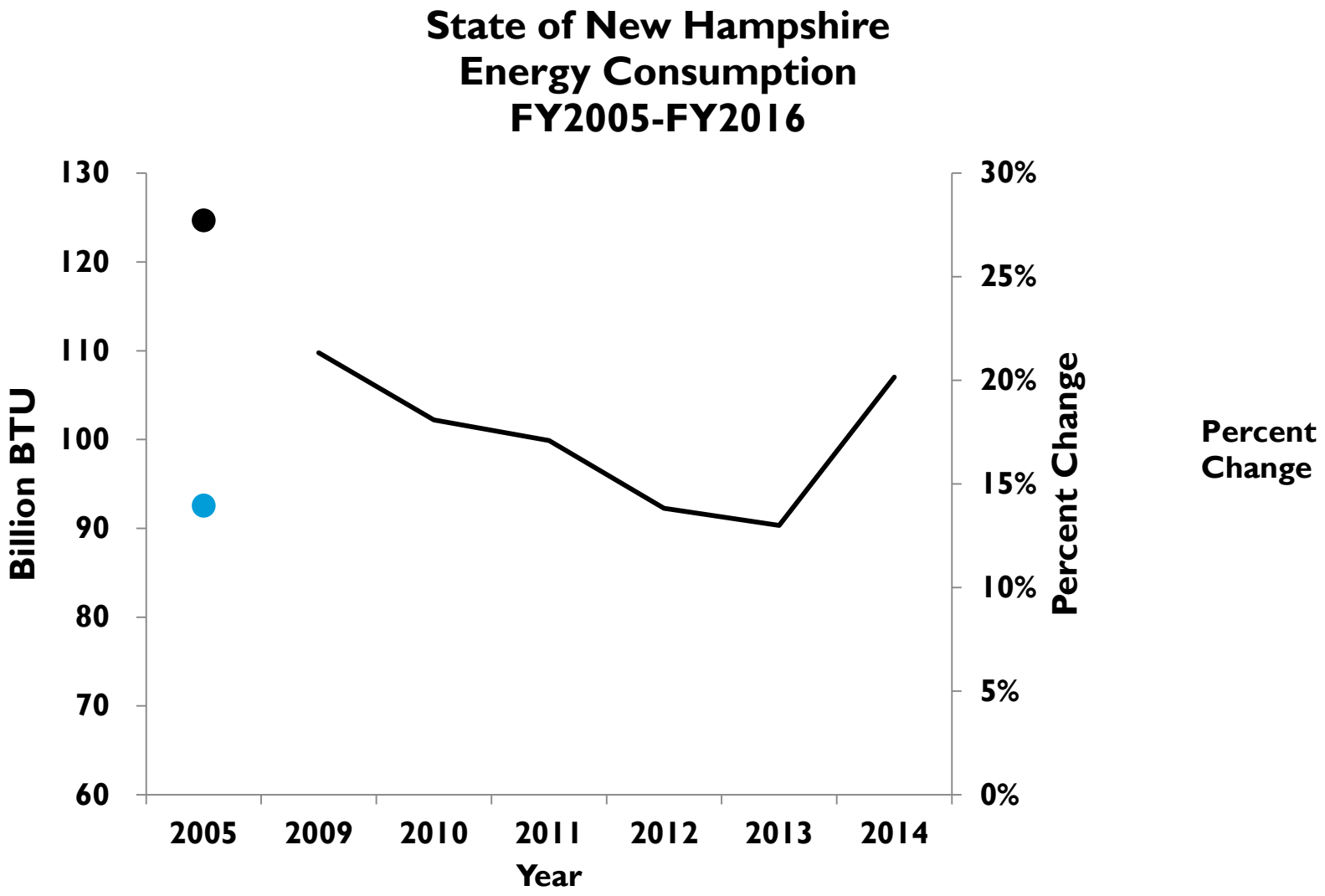
- State-owned renewable energy facilities represent approximately 150 kW of capacity.
- Potential RECs (conservative est.):

  150 Kw X 4 hours/day X 365 days

  = 219 RECs annually
- The value of these RECs are no more than $55 each ($12,045)

# Is the State generating RECs?

- The State has not, to date, registered our renewable energy generation and therefore have not been issued the RECs.
- It is assumed that the energy supply companies have utilized our unclaimed RECs for their own compliance.


State of New Hampshire
Energy Consumption
FY2005-FY2016
Billion BTU
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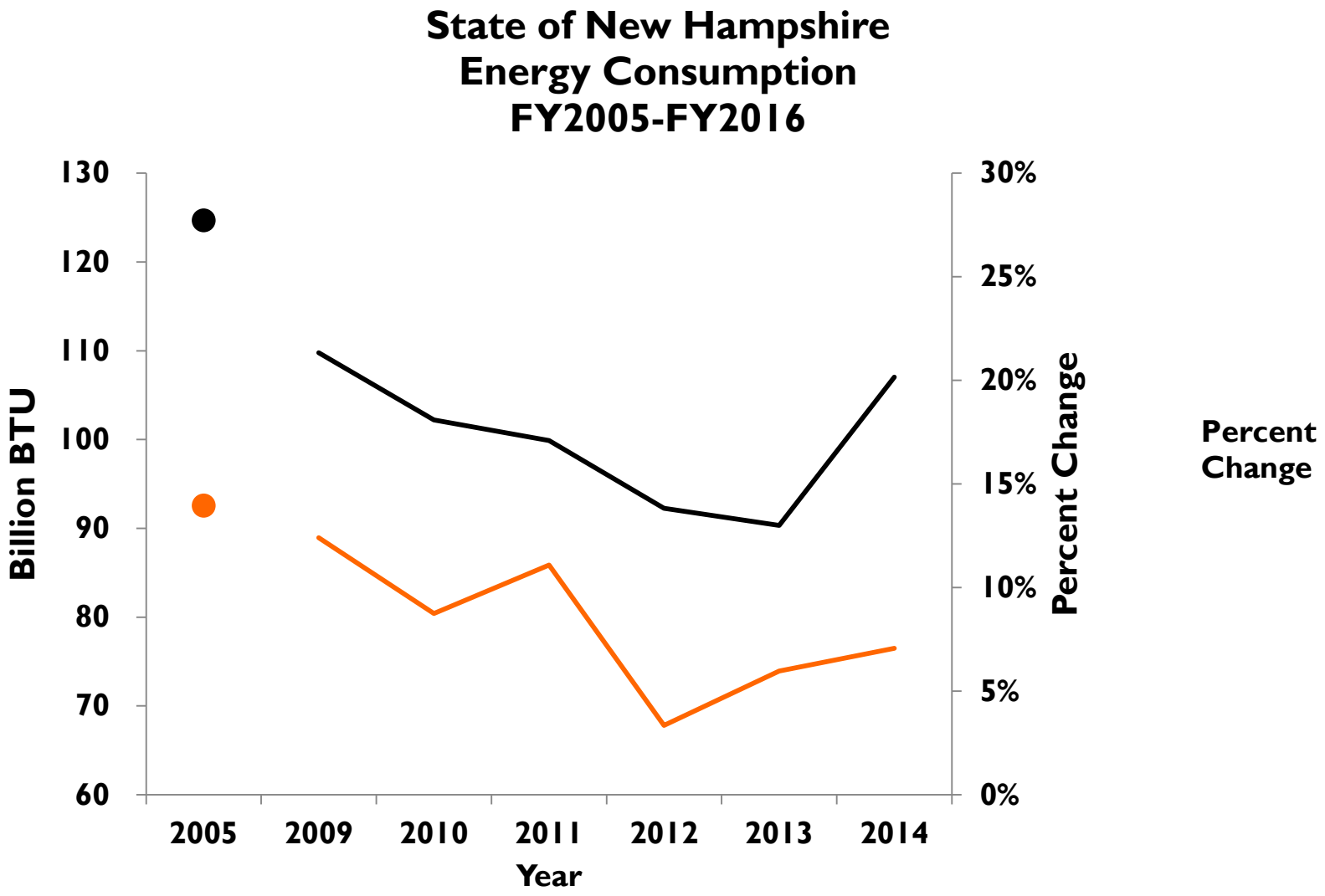
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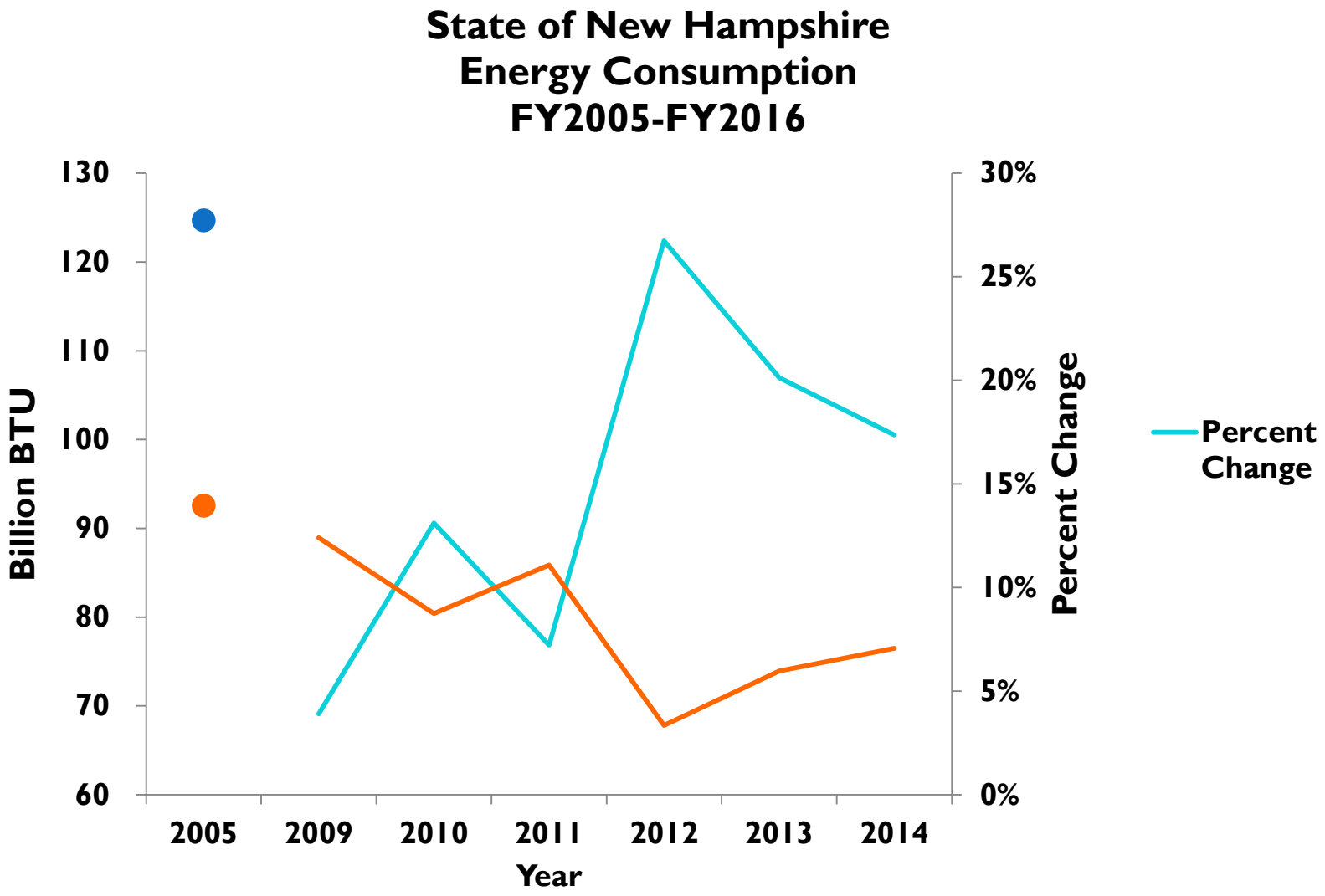
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# How can NH meet the goals?

- Reduce Total Energy Use
  - Energy Conservation
  - Energy Efficiency
- Switch to non-Fossil Fuels
  - Fossil Fuel = liquid petroleum fuels (gas, diesel, heating oil; natural gas; propane, coal
  - Non FF – biofuels; biomass (wood); solar; hydro, wind, landfill gas, thermal and nuclear
- Purchase RECs as part of our state energy purchases

# BIG Questions

- Should the State claim our RECs and how much will it cost to do so?
- Can/should the State sell its valuable compliance RECs and purchase an equal amount of less expensive voluntary RECs?
- Where would the revenue go if RECs were sold?
- Who owns the REC? Agency or State?

# State Energy Management Objectives

Derived from Executive Order 2016-03 and SB 73 (2010)

- **Objective 1 : Reduce Impacts -** Reduce negative environmental and public health impacts by reducing fossil-fuel energy use in state buildings, operations and fleets.
- **Objective 2 : Reduce Expenditures -** Reduce energy expenditures in buildings and fleets.
- **Objective 3 : Lead By Example -** Lead by example in energy efficiency, conservation and renewable energy.

# Potential REC Pathways

1. No Action (BAU Case)
2. Update Energy Accounting
3. Certify and Retire
4. Certify and Sell
5. Certify, Sell and Buy
6. Certify, Sell and Reinvest

# 1. No Action (BAU Case)

No changes to present treatment of REC eligible systems or to current tracking and reporting.

- **Reduce Impacts** – No change
- **Reduce Expenditures** – No change
- **Lead By Example** – In theory there is no change, but the State, by the claiming unregistered renewable energy that is also being claimed by the energy suppliers, is double-dipping, therefore BAU is not seen as a viable option.

# 2. Update Energy Accounting

Correct our accounting by showing all our energy use, including that derived from un-registered, net-metered renewable energy systems, as being fossil fuel use.

- **Reduce Impacts** – No change
- **Reduce Expenditures** – No change
- **Lead By Example** – While the State could still highlight our renewable energy systems, it could not claim to be using renewable energy, thus diminishing its lead by example efforts.

# 3. Certify and Retire

Certify eligible systems and retire RECs.

- **Reduce Impacts** – Energy suppliers would need to find other sources of renewable energy, which could result in new renewable energy resources that would offset fossil fuel sources, reduce emissions and improve overall environmental and public health.
- **Reduce Expenditures** – The State may incur additional costs for handling the registration and retire process.
- **Lead By Example** – The State could claim renewable energy use.

# 4. Certify and Sell

Certify eligible systems and sell RECs

- **Reduce Impacts** - No change from BAU.
- **Reduce Expenditures** - The State may incur additional costs for handling the registration and retire process.
- **Lead By Example** - While the State could still highlight our renewable energy systems, it could not claim to be using renewable energy, thus diminishing its lead by example efforts.

# 5. Certify, Sell and Buy

Certify eligible systems, sell compliance RECs, and purchase lower cost voluntary RECs.

- **Reduce Impacts** – No change from BAU.
- **Reduce Expenditures -** The State may incur additional costs for handling the registration, retire, and purchase process.
- **Lead By Example -** The State could claim renewable energy use.

# 6. Certify, Sell and Invest

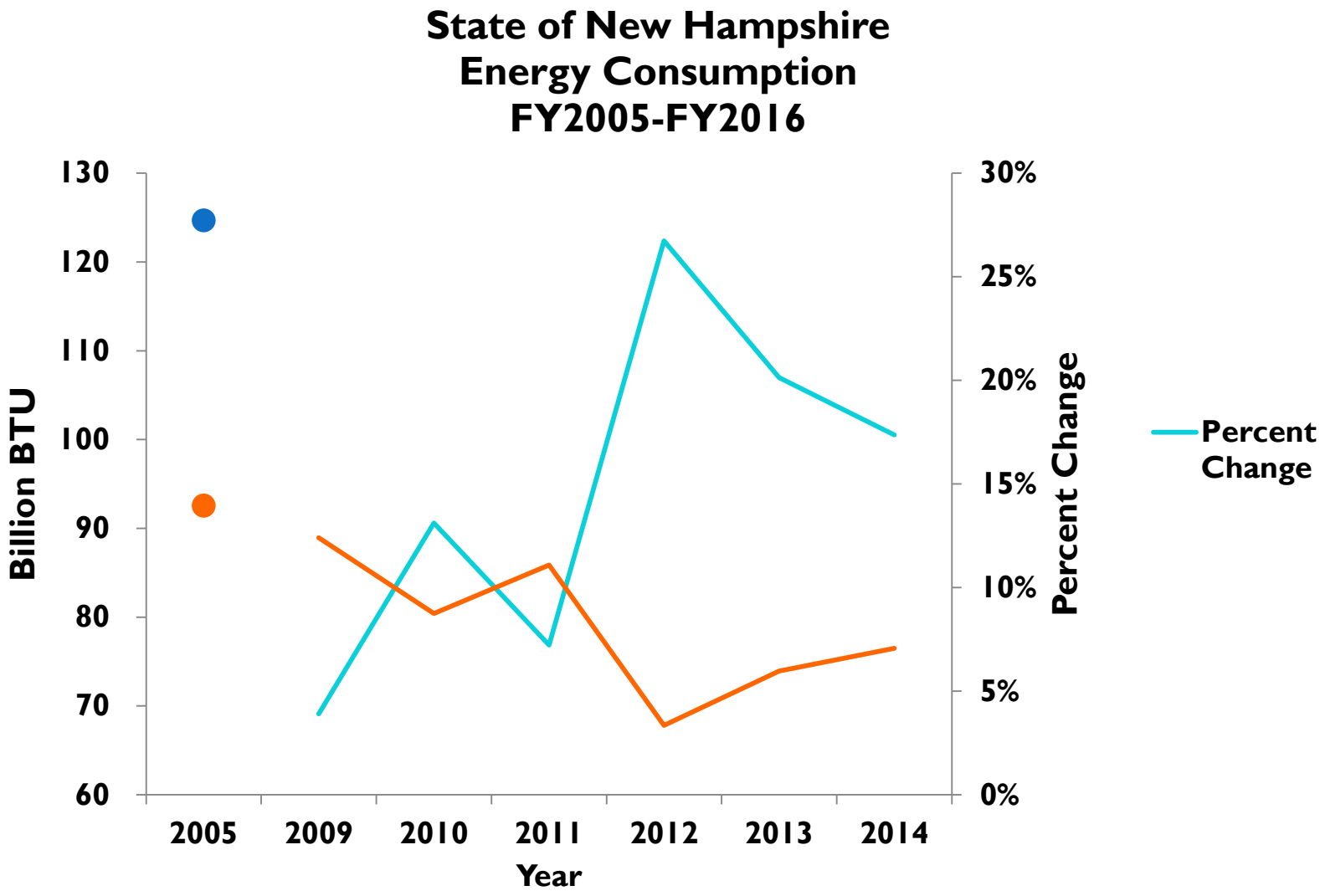
Certify eligible systems, sell compliance RECs and invest the proceeds into new renewable energy and/or energy efficiency projects (will require change to state law).

- **Reduce Impacts** – This could improve cost-effectiveness for new projects and result in new renewable energy sources or reduced energy use, thereby reducing impacts.
- **Reduce Expenditures** -The State may incur additional costs for handling the registration, sell, and invest process.
- **Lead By Example** – The State could not claim to be using renewable energy, but could highlight this as a model to reduce petroleum use in the broader energy market.

# Pathway Comparison

| Comparison Chart | Objective 1 | Objective 2 | Objective 3 |
|---|---|---|---|
| | *Reduce Public Health & Environmental Impacts* | *educe Energy Expenditure* | *Lead By Example* |
| 1. No Action (BAU) | | | - |
| 2. Update Energy Accounting | | | -- |
| 3. Certify and Retire | ++ | | + |
| 4. Certify and Sell | | | - |
| 5. Certify, Sell and Buy | | + | + |
| 6. Certify, Sell and Invest | ++ | + | + |

no, or minimal impact
negative impact
positive impact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# Discussion